CLAIMS

What is claimed is:

1. An apparatus comprising:

a frame module to process a frame containing information regarding a local node in a first network, the information including discovery information and network state information, the discovery information being represented in a common description;

an information module coupled to the frame module to manage the information; and

a communication module coupled to the frame module and the information module to manage communication between the local node and a remote node in a second network using the information.

2. The apparatus of claim 1 wherein the frame module comprises:

a frame builder to build the frame containing the information;

a frame transmitter coupled to the frame builder to transmit the frame to another local node in the first network or the remote node in the second network;

a frame poller coupled to the frame transmitter to provide a polling frame requesting for information of the remote node; and

a frame receiver to receive another frame from another local node in the first network or to receive a remote frame from the remote node.

3. The apparatus of claim 2 wherein the frame receiver forwards the received remote frame to the communication module if the received remote frame is related to the network communication.

4. The apparatus of claim 2 wherein the frame receiver forwards the received remote frame to the information module of the local node, to another local node in the first network, or to another remote node if the received remote frame is related to information exchange and meets an acceptance condition.

5. The apparatus of claim 4 wherein the acceptance condition is based on a forwarding number and propagation parameters including a propagation list and a

propagation type, the forwarding number and the propagation type being contained in the frame..

6. The apparatus of claim 1 wherein the information module comprises:

a collector to collect the information;

a translator coupled to the collector to translate the discovery information into the common description;

a node selector coupled to the collector to determine if the local node participates in the communication based on the network state information of the local node and other network state information from another local node in the first network; and

a synchronizer to synchronize the collected information with other information. from other local nodes in the first network.

7. The apparatus of claim 6 wherein the information module further comprises:

an information table to store entries regarding information extracted from a received remote frame; and

an information table updater to update the entries.

8. The apparatus of claim 1 wherein the communication module comprises:

a usage evaluator to evaluate network usage to determine relative location of the second network based on an interference list from the network state information;

a channel migration evaluator to evaluate a channel allocation layout;

a channel change controller to control a channel change based in the channel allocation layout; and

a channel changer to change channel of the local node according to a wireless mode used by the node.

9. The apparatus of claim 8 wherein the channel migration evaluator evaluates an alternate layout based on a relationship between interference and channel distance.

10. The apparatus of claim 1 wherein the discovery information includes information on at least node device, node service, and user.

11. The apparatus of claim 1 wherein the network state information includes at least one of network configuration, network status, network history, and an interference list.

12. The apparatus of claim 11 wherein the interference list includes at least a network from which the local node receives a beacon or directly receives a remote frame from the remote node.

13. A method comprising:

processing a frame containing information regarding a local node in a first network, the information including discovery information and network state information, the discovery information being represented in a common description;

managing the information; and

managing communication between the local node and a remote node in a second network using the information.

14. The method of claim 13 wherein processing the frame comprises:

building the frame containing the information;

transmitting the frame to another local node in the first network or the remote node in the second network;

providing a polling frame requesting for information of the remote node; and

receiving another frame from another local node in the first network or a remote frame from the remote node.

15. The method of claim 14 wherein receiving comprises forwarding the received remote frame to the communication module if the received remote frame is related to the network communication.

16. The method of claim 14 wherein receiving comprises forwarding the received remote frame to the information module of the local node, to another local node in the first network, or to another remote node if the received remote frame is related to information exchange and meets an acceptance condition.

17. The method of claim 16 wherein the acceptance condition is based on a forwarding number and propagation parameters including a propagation list and a

propagation type, the forwarding number and the propagation type being contained in the frame..

18. The method of claim 13 wherein managing the information comprises:
collecting the information;
translating the discovery information into the common description;
determining if the local node participates in the communication based on the network state information of the local node and other network state information from another local node in the first network; and
synchronizing the collected information with other information. from other local nodes in the first network.

19. The method of claim 18 wherein managing the information further comprises:
storing entries regarding information extracted from a received remote frame; and
updating the entries.

20. The method of claim 13 wherein managing the communication comprises:
evaluating network usage to determine relative location of the second network based on an interference list from the network state information;
evaluating a channel allocation layout;
controlling a channel change based in the channel allocation layout; and
changing channel of the local node according to a wireless mode used by the node.

21. The method of claim 20 wherein evaluating a channel allocation layout comprises evaluating an alternate layout based on a relationship between interference and channel distance.

22. The method of claim 13 wherein the discovery information includes information on at least node device, node service, and user.

23. The method of claim 13 wherein the network state information includes at least one of network configuration, network status, network history, and an interference list.

24. The method of claim 23 wherein the interference list includes at least a network from which the local node receives a beacon or directly receives a remote frame from the remote node.

25. An article of manufacture comprising:

a machine-accessible medium including data that, when accessed by a machine, causes the machine to perform operations comprising:

processing a frame containing information regarding a local node in a first network, the information including discovery information and network state information, the discovery information being represented in a common description;

managing the information; and

managing communication between the local node and a remote node in a second network using the information.

26. The article of manufacture of claim 25 wherein the data causing the machine to perform processing the frame comprises data that, when accessed by the machine, causes the machine to perform operations comprising:

building the frame containing the information;

transmitting the frame to another local node in the first network or the remote node in the second network;

providing a polling frame requesting for information of the remote node; and

receiving another frame from another local node in the first network or a remote frame from the remote node.

27. The article of manufacture of claim 26 wherein the data causing the machine to perform receiving comprises data that, when accessed by the machine, causes the machine to perform operations comprising forwarding the received remote frame to the communication module if the received remote frame is related to the network communication.

28. The article of manufacture of claim 26 wherein the data causing the machine to perform receiving comprises data that, when accessed by the machine, causes the machine to perform operations comprising forwarding the received remote frame to the information module of the local node, to another local node in the first network, or to another remote node if the received remote frame is related to information exchange and meets an acceptance condition.

29. The article of manufacture of claim 28 wherein the acceptance condition is based on a forwarding number and propagation parameters including a propagation list and a propagation type, the forwarding number and the propagation type being contained in the frame..

30. The article of manufacture of claim 25 wherein the data causing the machine to perform managing the information comprises data that, when accessed by the machine, causes the machine to perform operations comprising:

collecting the information;

translating the discovery information into the common description;

determining if the local node participates in the communication based on the network state information of the local node and other network state information from another local node in the first network; and

synchronizing the collected information with other information. from other local nodes in the first network.

31. The article of manufacture of claim 30 wherein the data causing the machine to perform managing the information further comprises data that, when accessed by the machine, causes the machine to perform operations comprising:

storing entries regarding information extracted from a received remote frame; and

updating the entries.

32. The article of manufacture of claim 25 wherein the data causing the machine to perform managing the communication comprises data that, when accessed by the machine, causes the machine to perform operations comprising:

evaluating network usage to determine relative location of the second network based on an interference list from the network state information;

evaluating a channel allocation layout;

controlling a channel change based in the channel allocation layout; and

changing channel of the local node according to a wireless mode used by the node.

33. The article of manufacture of claim 32 wherein the data causing the machine to perform evaluating a channel allocation layout comprises data that, when accessed by the machine, causes the machine to perform operations comprising evaluating an alternate layout based on a relationship between interference and channel distance.

34. The article of manufacture of claim 25 wherein the discovery information includes information on at least node device, node service, and user.

35. The article of manufacture of claim 25 wherein the network state information includes at least one of network configuration, network status, network history, and an interference list.

36. The article of manufacture of claim 35 wherein the interference list includes at least a network from which the local node receives a beacon or directly receives a remote frame from the remote node.

37. An apparatus comprising:

means for processing a frame containing information regarding a local node in a first network, the information including discovery information and network state information, the discovery information being represented in a common description;

means for managing the information; and

means for managing communication between the local node and a remote node in a second network using the information.

38. The apparatus of claim 37 wherein the means for processing the frame comprises:

means for building the frame containing the information;

means for transmitting the frame to another local node in the first network or the remote node in the second network;

means for providing a polling frame requesting for information of the remote node; and

means for receiving another frame from another local node in the first network or a remote frame from the remote node.

39. The apparatus of claim 37 wherein the means for managing the information comprises:

means for collecting the information;

means for translating the discovery information into the common description;

means for determining if the local node participates in the communication based on the network state information of the local node and other network state information from another local node in the first network; and

means for synchronizing the collected information with other information. from other local nodes in the first network.

40. The apparatus of claim 37 wherein the means for managing the communication comprises:

means for evaluating network usage to determine relative location of the second network based on an interference list from the network state information;

means for evaluating a channel allocation layout;

means for controlling a channel change based in the channel allocation layout; and

means for changing channel of the local node according to a wireless mode used by the node.